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NEWSLETTER

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Epidemiology Resource Center
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Pertussis Outbreak Continues, But Slowing

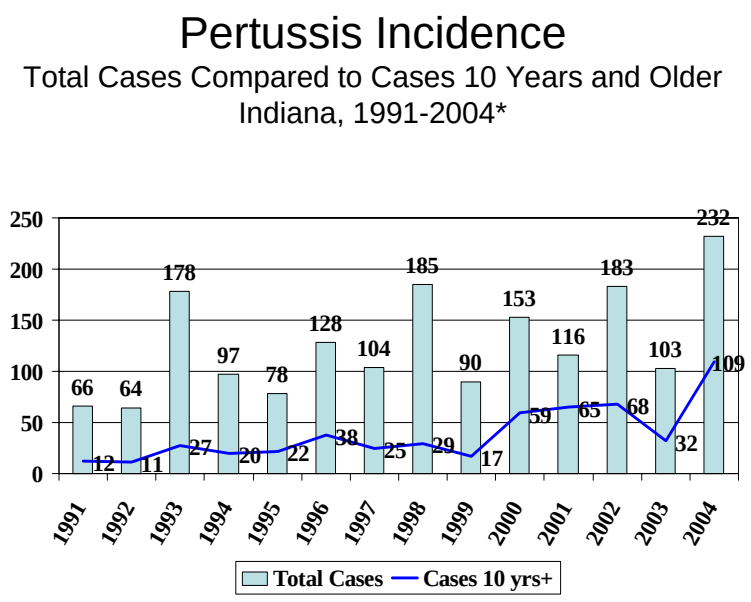
Wayne Staggs, MS
ISDH Epidemiology Resource Center

Introduction and Background

Pertussis is the most frequently reported vaccine-preventable disease among children less than five years of age. Large numbers of cases have been reported nationally and statewide this year, with a continuing trend of increased adolescent and adult cases.

As of November 27, 2004, 15,206 cases of pertussis have been reported nationally, as compared to 8,749 in 2003. This represents a 74% increase for 2004. As of November 26, 2004, 232 cases (including 10 cases of parapertussis) had been reported in Indiana. This is the largest number of cases reported in Indiana since 1984 (259 cases). With an additional 30 cases under investigation at the end of November, it is likely that the largest number of cases since 1967 (304 cases) will be recorded this year. In 2003, Indiana recorded 103 cases; in 2002, 183 cases were reported. (See Figure 1 for recent disease incidence trend.)

Figure 1.



*2004 as of Nov. 26

This report will summarize the current status of pertussis disease in Indiana with regard to age, sex, race, geographical location, and seasonality and also provide recommendations on control and prevention.

Descriptive Analysis (Sex, Race, and Age) of 2004 Cases

Females have accounted for 119 (51%) of the cases reported, as compared to 113 cases in males (49%) in 2004. There have been 211 cases (90.9%) among whites, 17 cases (7.3%) among blacks, and 17 cases (7.3%) among Hispanics.

The age breakdown of cases is shown in Table 1.

Table 1. Age of Cases, January – November 26, 2004, Indiana

Age Group	Number of Cases	Percent of Cases for Age Group	Case Rate (Per 100,000) for Age Group
Less than 1 Year	50	21.6%	59.2
1-4 Years	42	18.1%	12.4
5-9 Years	31	13.3%	7.0
10-19 Years	50	21.6%	5.6
20 + Years	59	25.4%	1.2

According to Table 1, 47% of cases have occurred in those ages 10 and older in Indiana in 2004. Nationally, over 60% of cases have occurred in this age group this year. As seen in Figure 1, the number of cases in those ages 10 and older has steadily increased from 1991- 2004, from a low of 11 cases in 1992 to 109 cases so far in 2004. The trend toward increased numbers of cases in adolescents and adults is most likely due to a combination of waning immunity and better recognition and reporting of cases in the older age groups.

Immunity to pertussis begins to wane 5-10 years following the last vaccine dose (appropriately given at 4-6 years of age). Therefore, pertussis in adolescents and adults can occur even though they were fully vaccinated as children, and older children and adults often serve as the source of infection for infants, who are most at risk for the severe consequences of infection. The disease may be milder in older persons, and the infected adult or adolescent may not be identified until an ill infant has been hospitalized and/or diagnosed. Many other adults and adolescents are often undiagnosed and serve as sources of infection in the family and community. A recent prospective study (1) conducted among adolescents and adults (10-49 years of age) in a managed care organization in Minnesota reported that "…the estimated annual incidence of pertussis was 507 cases per 100,000 person-years." The study published in the May 1, 2001, issue of *The Journal of Infectious Diseases* concluded that *Bordetella pertussis*, the bacterium causing pertussis infection, may be a more common cause of cough illness among adolescents and adults than was recognized previously. The study further suggests that a booster dose of acellular pertussis vaccine at entry to middle school may be an effective strategy to prevent pertussis among U.S. adolescents. It has been reported that vaccine manufacturers have applications pending with FDA for licensure of an adolescent/adult DTaP booster dose.

Geographical Location of 2004 Cases

Pertussis has been reported in every region of Indiana. St. Joseph County has had the largest outbreak, with 94 cases reported. Table 2 indicates the counties with 5 or more cases reported this year. Twenty-nine other counties have reported at least one case in 2004.

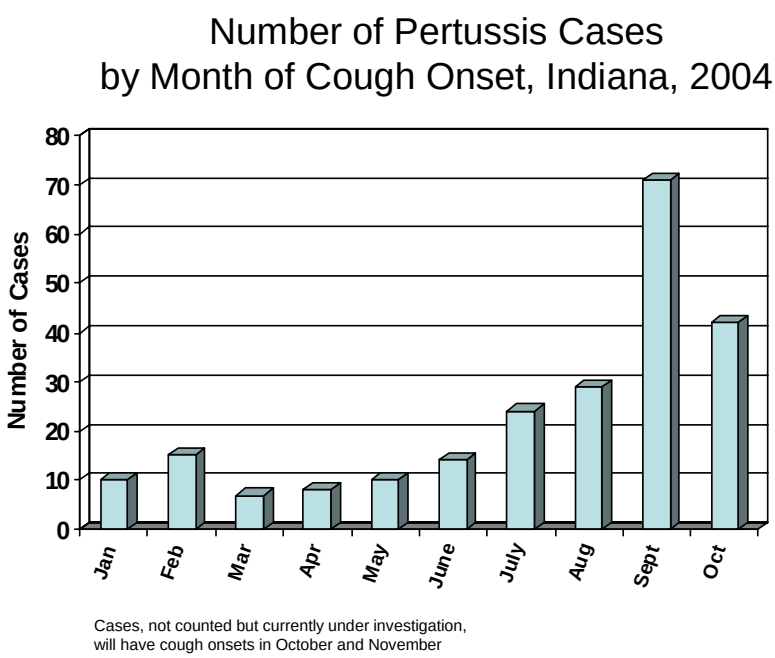
Table 2.
Indiana Counties with Five or More Pertussis Cases, January 1 - November 26, 2004

County	Cases	Case Rate (per 100,000)
St. Joseph	94	35.5
Allen	13	3.9
Hamilton	11	5.6
Marion	9	1.1
Lake	9	1.9
Elkhart	7	3.8
LaPorte	7	6.3
Porter	7	4.7
Dearborn	6	12.8
Jefferson	6	18.7
Ripley	6	22.2
Adams	5	14.6

Seasonality

Although pertussis has no distinct seasonal pattern (cases are reported in every month of the year in the U.S.), incidence does increase during the summer and early fall months. Figure 2 indicates the number of cough onsets by month for cases occurring in 2004. (Note: Most cases currently under investigation have cough onsets in October and November but are not included in Figure 2). It appears that pertussis incidence may have peaked in September, with 71 cases having cough onset during that month. Also, the number of cases being investigated has decreased since the beginning of November, with only 64 reports of suspected cases in November, as compared to 109 reports of suspected cases in October. (Note: After investigation, not all suspected cases are confirmed as cases, and the date reported to the ISDH does not necessarily correspond to cough onset date.)

Figure 2.



Recommendations

Since cases continue to be reported, the ISDH offers the following recommendations for prevention and control of pertussis (health care providers may wish to follow the link for greater detail):

- Ensure all children eligible for pertussis vaccination are up-to-date with DTaP vaccine.
- Consider pertussis in the diagnosis of acute cough illness, regardless of the age of the patient, especially if the cough is associated with paroxysmal coughing, posttussive vomiting and/or gagging, or a cough persisting for two weeks or longer.
- Report any suspected case of pertussis to your local or state health department immediately so that control measures can be implemented. If pertussis is strongly suspected, you should not wait for laboratory results before reporting or treating the patient or close contacts of the patient. All household contacts of a case of pertussis should be given antibiotic prophylaxis. Pertussis Treatment and Chemoprophylaxis Recommendations can be found on the ISDH web site.
- Both culture and DFA testing (PCR testing is an alternative if available) should be performed on all suspected cases and symptomatic contacts of cases prior to the administration of antibiotics.

The Indiana State Department of Health wishes to acknowledge and thank the staff of local health departments and the State Immunization field staff for their dedication and many hours of work in controlling this pertussis outbreak. Far beyond the normal call of duty, their efforts certainly contributed to protecting the health of Indiana citizens.

The Role of Genotyping in TB Prevention and Control Activities

Paul Britton, R.N., M.S.
ISDH TB Control Program

Early diagnosis and effective treatment of disease, contact tracing, and treatment of infected contacts are the major strategies for limiting the transmission of tuberculosis. Preventing further transmission of the disease is a collective responsibility that requires the efforts of public health officials, health care providers, and laboratories. This is accomplished by finding contacts of infectious patients and ensuring that they are promptly evaluated and, if infected, that they complete a course of therapy for latent TB infection. Genotyping of TB isolates is a relatively new technology that has emerged as an additional tool in TB control and prevention efforts.

How Genotyping Benefits TB Control Programs

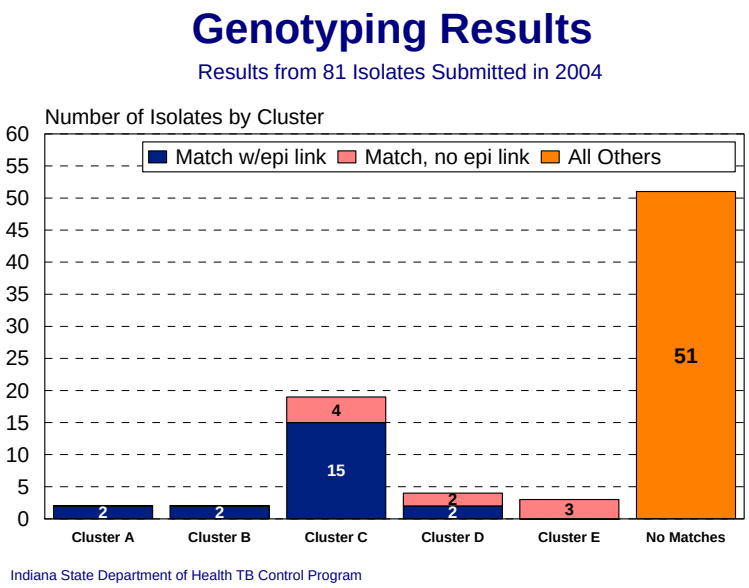
In 2004, the Indiana State Department of Health (ISDH) began to participate in the Centers for Disease Control and Prevention (CDC) Genotyping Program. By helping to identify TB patients who are involved in recent transmission, genotyping will have the following impact:

- Outbreaks can be detected earlier and controlled more rapidly.
- Incorrect TB diagnoses based on false-positive culture results can be identified more easily.
- Unsuspected relationships between cases and new and unusual transmission settings will be discovered.
- Transmission that occurs between patients who reside in different jurisdictions will be detected more readily.
- TB control programs will be able to evaluate completeness of routine contact investigations.

Since the early 1990s, a form of genotyping known as restriction fragment-length polymorphism (RFLP) has been in use. This method analyzes the insertion sequence IS6110, which is found in the genome of all strains of *M. tuberculosis* and *M. bovis*. Genotyping is currently being performed with two relatively new techniques based on the polymerase chain reaction (PCR): spacer oligonucleotide typing (spoligotyping) and mycobacterial interspersed repetitive units (MIRU) analysis.

Genotyping has played a significant role in understanding the transmission patterns of TB cases in several Indiana counties during the last eight years. It has also detected several cases of false positive TB cultures that were the result of laboratory contamination. Figure 1 shows matching genotypes grouped by cluster. Of the 81 isolates submitted this year for which genotype results are available, there were 30 matches grouped into 5 different clusters. Genotypes from the remaining 51 isolates did not match any others.

Figure 1.



How TB Genotyping Helps TB Prevention and Control Practices

When combined with epidemiologic data, TB genotyping results help to distinguish TB patients who are involved in the same chain of recent transmission from patients whose disease is the result of reactivation of a past TB infection. Since TB prevention and control efforts directed at preventing TB transmission (early diagnosis, treatment, and isolation) are fundamentally different from efforts to prevent reactivation (identification and treatment of infected contacts), genotyping offers a powerful tool to help direct the application of these different efforts.

TB genotyping identifies genetic links between *Mycobacterium tuberculosis* isolates from different TB patients. The key to determining if TB patients with matching genotypes are involved in the same chain of recent transmission is to investigate whether the patients share epidemiologic links that can explain where and how the exposure took place. If two patients with TB are known to have been in the same place when one of them was infectious, both are said to share known epidemiologic links. If two patients have isolates with matching genotypes and they also share known epidemiologic links, this provides strong evidence that they are involved in the same chain of recent transmission. In cases where the genotypes match but no epidemiologic links can be established, those patients were possibly involved in the same recent chain of transmission in some way, but a thorough contact investigation and detailed patient interviews should be conducted to determine if the patients share any common risk factors, such as living in the same neighborhood, frequenting the same bars and clubs, or working in the same building.

It is also possible that patients whose genotypes match but have no epidemiologic links to one another belong to the same genotyping cluster but were not involved in the same recent transmission. If two or more patients have genotypes that do not match, we can conclude that their TB disease is the result of reaction of an old infection rather than the result of recent transmission.

Genotyping will continue to perform a valuable role as an adjunct to conventional contact investigations and clinical diagnosis for the foreseeable future.

References:

1. Indiana State Department of Health Tuberculosis Information Management System database.
2. Friedman, Lloyd N. *Tuberculosis: Current Concepts and Treatment*. Boca Raton: CRC Press. 1994.
3. Driscoll, Jeffery R., et al. "How and Why We Fingerprint Tuberculosis." RT, *The Journal for Respiratory Care Practitioners*, February/March 2001.
4. Centers for Disease Control and Prevention. *Guide to the Application of Genotyping to Tuberculosis Prevention and Control*, June 2004.

Staffing Changes to ERC, PHPERD

Deb Fulk joined the ISDH on December 6 as the Public Health Coordinator for District 2. Deb has a BS in public affairs with a concentration in criminal justice. She is a certified EMT, a former deputy sheriff and town marshal, and a former hospital emergency department technician. Deb most recently served as Elkhart County's Public Health Coordinator addressing emergency preparedness activities and has been involved with the District 2 Alliance. Deb will be based at the District 2 office in Elkhart and will serve local health departments in Elkhart, Fulton, Kosciusko, Marshall, Pulaski, St. Joseph, and Starke Counties.

Laura Bates will join the PHPERD on December 20 as an Administrative Assistant 4 supporting Gary Couch, the mass prophylaxis program staff, and the Public Health Coordinators. Laura will be stationed at the ISDH on Selig 6 building. Laura has previously supported the ISDH Legislative Affairs staff and the Deputy State Health Commissioner, as well as the Bureau of Motor Vehicles executive staff.

OUTBREAK SPOTLIGHT….

"Outbreak Spotlight" is a regularly appearing feature in the *Indiana Epidemiology Newsletter* to illustrate the importance of various aspects of outbreak investigation. The event described below highlights the importance of prompt outbreak investigation and implementation of effective control measures in an institutional setting.

Karen Gordon
Field Epidemiologist
ISDH Epidemiology Resource Center

Background

On February 19, 2004, a local health department (LHD) representative notified the Indiana State Department of Health (ISDH) of a child with laboratory-confirmed shigellosis who attended Child Care Center A. This was the third confirmed case identified at the center. The two earlier confirmed children were siblings, so household exposure was suspected when they were identified. Documented transmission to another attendee of the daycare center fulfilled the definition of an outbreak.

Epidemiologic Investigation

A collaborative investigation of this outbreak was initiated by the ISDH and the LHD. The ISDH developed a questionnaire for children and staff to determine the nature of the illness and identify other possible cases. A case was defined as any previously healthy person associated with Child Care Center A who became ill with diarrhea since February 1. Any person whose illness had another explanation or whose symptoms did not include diarrhea was not considered as a case. The LHD Communicable Disease Director assembled members of the Shigella Outbreak Response Team (SORT). Team members as well as other employees in the Communicable Disease Division attempted to interview each of the 77 individuals identified as an attendee or employee.

Approximately 46 of those interviewed were reported ill. Thirty-eight attendees and staff members met the case definition. Symptoms experienced by the 38 cases included diarrhea (100%), cramps (51%), fever (42%), median temperature: 101.0° F), nausea (40%), vomiting (35%), headache (21%), and bloody diarrhea (16%). Other symptoms reported were body ache and chills.

To identify anyone who may have been asymptomatically shedding *Shigella* bacteria, stool testing of all child care employees and children was initiated as recommended by the ISDH. The LHD provided the child care director with recommendations to control the spread of infection, including exclusion policies, hand washing, adequate disinfection and proper glove use during diaper changes. The childcare director distributed this information to each parent and employee along with notification that stool testing was to be completed by February 23. Anyone with diarrhea was excluded pending laboratory tests, results, treatment, and symptom resolution. Any child or staff member testing positive for shigellosis was immediately excluded until asymptomatic and five days of antibiotic therapy had been completed or two stool specimens had been submitted and confirmed culture negative.

The LHD continued active surveillance for additional cases of diarrheal illness at Child Care Center A until two incubation periods had elapsed without onset of new cases of shigellosis linked to the center. The Indiana Family and Social Services Administration (FSSA) continued to monitor the facility through unannounced inspections. No additional cases linked to Child Care Center A were found by March 27, so the outbreak was declared over. However, evidence of community transmission was further indicated through May 17 by eight additional cases. These involved two other childcare centers and one school.

Laboratory Results

Initially stool specimens were sought for testing at the ISDH Laboratories. Upon learning that the preservative in the specimen collection kits was only effective for 48 hours after collection, it was not feasible to submit previously collected samples or those scheduled for collection over the weekend. The LHD laboratory director stated that presumptive testing for *Shigella* could be conducted on-site using rectal swabs. This method was used for anyone who had difficulty accessing testing through a physician or clinic. This presumptive test was used on 54 specimens that arrived at the LHD laboratory. All of these results were negative. Twenty-nine stool cultures were tested at local hospitals or clinic laboratories. Nineteen of these cultures tested negative and ten tested positive for *Shigella sonnei*. Four persons were clinically diagnosed with shigellosis.

Environmental Assessment

LHD representatives conducted child care center staff training regarding hand washing and disinfectant recommendations. A LHD representative also made frequent announced and unannounced visits to the facility to review the significance of hand washing as prevention and to inspect the condition of the restrooms, diaper changing areas, and common surfaces and objects. The facility demonstrated inconsistency in following disinfection practices and exclusion policies.

An inspector from the FSSA visited Child Care Center A on April 20, 2004. She cited a number of deficiencies, including soap dispensers being empty or not available at each sink, hand towels and toilet paper not dispensing properly, and toilet seats missing from toilets. Since the facility is designated as a child care ministry, no penalty or follow-up was indicated.

On March 5, 2004, Child Care Center A had undergone a previous inspection with several violations cited, ranging from not changing crib linens daily, staff handling ready-to-eat foods with bare hands, the boys' bathroom floor and wall being heavily soiled, failure to wash children's hands before eating, and staff improperly washing hands during glove use. No enforcement information was available as the provider is not state regulated.

Conclusions

This investigation confirms that an outbreak of shigellosis occurred at Child Care Center A during January-March 2004. The only consistent common exposure among the cases was association with Child Care Center A. The causative agent was *Shigella sonnei.*

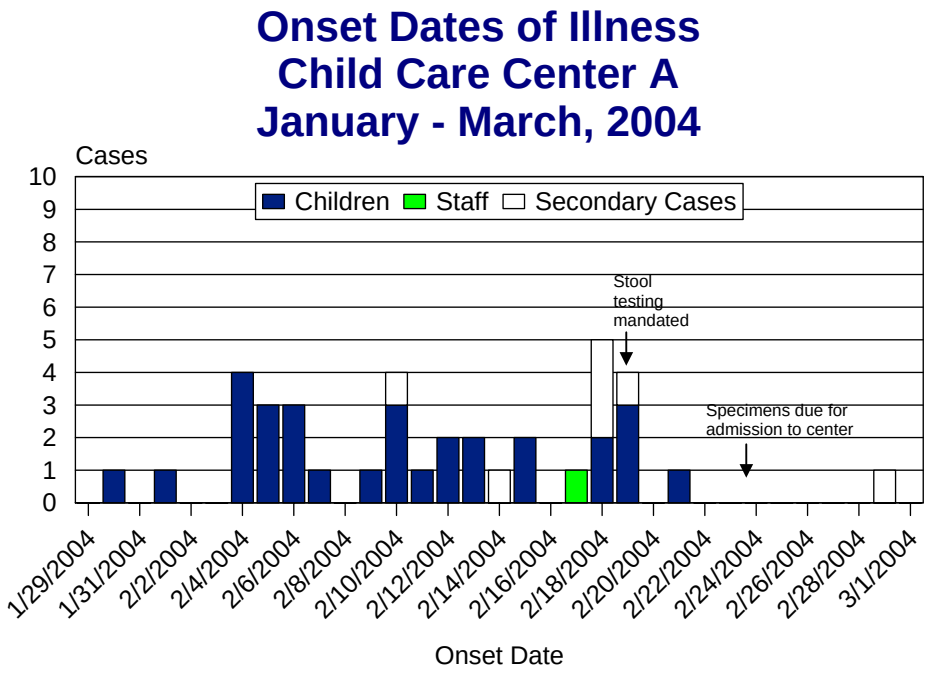
Shigella bacteria are found only in humans and are shed through stool. Symptoms of shigellosis include abdominal cramps, diarrhea (usually containing blood or mucus), nausea, vomiting, and fever. Without appropriate antibiotic treatment, those infected can shed the bacteria as long as one month after symptoms cease.

Transmission occurs through direct or indirect fecal/oral contact, with ingestion of as few as 10-100 organisms. Bacteria can be transmitted through contaminated food or water or person-to-person contact. Foodborne shigellosis outbreaks usually occur when an infected food handler with inadequately washed hands prepares food that is served raw (e.g., salads, vegetables, etc.) or that is handled extensively after cooking (e.g., sliced sandwich meats, rolls, etc.). Person-to-person transmission can occur through direct physical contact or placing contaminated objects in the mouth.

The epidemic curve depicting the onset dates of cases (see Figure 1) indicates that this outbreak occurred most likely via person-to-person transmission. In point-source outbreaks, including foodborne, many cases become ill simultaneously shortly after one particular exposure, such as a contaminated food item, and resolve rather quickly. In propagated outbreaks, including person-to-person, cases become ill at different times, usually in "waves", resulting from exposure to more than one source. Transmission may continue over time within several areas of a facility. This is the pattern observed.

Infection was likely introduced through an ill child or staff member who attended Child Care Center A (see Figure 1). The earliest reported onset date in a child was January 30. Infection can quickly spread, especially in the absence of adequate hygiene, due to the infectious nature of *Shigella* and a small, somewhat closed population.

Figure 1.



To prevent the spread of infection, the Indiana Communicable Disease Reporting Rule 410 IAC 1-2.3 mandates that children diagnosed with shigellosis must be excluded from daycare if they are symptomatic (i.e., have diarrhea and/or vomiting) or test positive for the organism. The CDC defines diarrhea as three or more loose stools in 24 hours. Children may return to the daycare center if they are asymptomatic and have either received five days of antibiotic therapy or have submitted two negative stool cultures. Staff members must be excluded if they are symptomatic or test positive for the organism, and may return only if asymptomatic and have submitted two negative stool cultures at least 48 hours after the completion of any antibiotic therapy. Children and staff who are asymptomatic and awaiting test results or completion of therapy may be cohorted separately from those who are negative or have completed therapy.

In addition to enforcing the Communicable Disease Reporting Rule, several other measures were promptly taken to stop the spread of the outbreak. First, the LHD provided recommendations for prevention, including exclusion policies, hand-washing guidelines, and disinfection, to the child care director. LHD staff visited the facility regularly to ensure that the recommendations were being followed. On the deadline date to submit stool specimens, health department staff members were present during opening hours at the facility to control entry of anyone who had failed to comply with the submission order. If someone arrived still in need of testing, nurses were available on-site to collect samples. Enrollment of new children was suspended until the outbreak was declared over.

The LHD issued notices to the media, schools, local health care providers and surrounding local health departments describing the outbreak. Notification was also sent to other local licensed child care facilities, home daycare providers, and child care ministries. None of the attendee cases had onset dates following the specimen deadline date of February 23. Swift and decisive measures taken by LHD attributed to control of the outbreak.

In general, most person-to-person outbreaks of shigellosis can be prevented by strictly adhering to the following practices:

1. Thoroughly wash hands with soap and water before preparing food, after using the restroom, after diapering children, and before eating.
2. Thoroughly wash hands with soap and water after assisting someone using the restroom or caring for people ill with diarrhea and vomiting.
3. Supervise young children when they are washing their hands.
4. Exclude food handlers or staff having direct care of children while ill with diarrhea or if they are infected with *Shigella*.
5. Exclude children from child care settings while ill with diarrhea or if they are infected with *Shigella*.

Training Room

Indiana State Department of Health
Immunization Program Presents:
"Child and Adolescent Immunizations from A to Z"

The ISDH Immunization Program and Health Educators are offering this free, one-day educational course on all aspects of immunization practices. Topics include:

- Principles of Vaccination
  - Overview of the immune system
  - Classification of vaccines
- An overview of Vaccine-Preventable Diseases
- General Recommendations on Immunization
  - Timing and spacing
  - Contraindications and precautions to vaccination
- Safe and Effective Vaccine Administration
  - Prior to administration
  - Administration
  - Documentation and reminder/recall
  - Adverse Events
- Safe Vaccine Storage and Handling
- Indiana Requirements
  - Schools
  - Daycare/Head Start
  - Exemptions
- Tools to Read Immunization Records
- Vaccine Misconceptions
  - MMR and autism
  - Thimerosal and mercury
  - Overloading the immune system
  - Influenza vaccine
- Reliable Resources

This course is designed for all immunization providers and staff. Presentation of this course takes six hours or can be customized to provide the components needed for your office or clinic staff. A training manual and certificate of attendance are provided to all attendees.

Courses are held throughout Indiana about four times per month (see schedule next page). All persons involved in immunizations are encouraged to attend a course in their area. Registration is required. To attend or schedule/host a course in your area, or for more information on "Child and Adolescent Immunizations from A to Z" and other immunization education opportunities, please contact Beverly Sheets by calling (317) 501-5722 or e-mail hepbbev@aol.com.

CALENDAR 2005 "IMMUNIZATIONS FROM A TO Z"

Jan. 26, 2005 - Greenfield, Hancock County (site TBA)

Feb. 15, 2005 - Margaret Mary Community Hospital, Batesville

Feb. 25, 2005 - Hamilton County Fair Grounds

April 13, 2005 - IUMG

May 4, 2005 - Anderson, Madison County Health Department

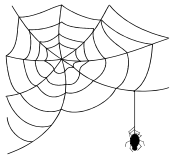
NOTE: There is NO CHARGE for any of these events.

YOU MUST REGISTER for these events. Training materials are provided.

Contact Beverly Sheets at 317-501-5722 or hepbbev@aol.com for further information and to schedule "Immunizations From A –Z" and other immunization events in your area.

Mark your calendars NOW!

Indiana Immunization Fall Awards Conferences Sunday, October 2, 2005.
"Reception With Speakers" - Monday, October 3, 2005. Conference site to be announced.



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.statehealth.in.gov/dataandstats/epidem/epinews_index.htm

Indiana Cancer Incidence Report (1990, 95, 96, 97)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001, 2002)

Indiana Health Behavior Risk Factors (BRFSS) Newsletter

Indiana Hospital Consumer Guide (1996)

Public, Hospital Discharge Data (1999, 2000, 2001)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana Marriage Report (1995, 97, 98, 99, 2000)

Indiana Mortality Report (1999, 2000, 2001, 2002)

Indiana Natality Report (1995, 96, 97, 98, 99, 2000, 2001, 2002)

Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)

Indiana Infectious Diseases Report (1997, 1998, 1999, 2000, 2001)

Former Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)

HIV Disease Summary

Information as of November 30, 2004 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

343	New HIV cases from December 2003 thru November 2004	12-month incidence	5.64 cases/100,000
3,607	Total HIV-positive, alive and without AIDS on November 30, 2004	Point prevalence	59.33 cases/100,000

AIDS cases to date:

359	New AIDS cases from December 2003 thru November 2004	12-month incidence	5.90 cases/100,000
3,591	Total AIDS cases, alive on November 30, 2004	Point prevalence	59.06 cases/100,000
7,423	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in November *MMWR* Week 44-48		Cumulative Cases Reported January - November *MMWR* Weeks 1-48	
	2003	2004	2003	2004
Campylobacteriosis	45	22	450	363
Chlamydia	1,463	1,598	15,642	17,014
E. coli O157:H7	12	2	82	47
Hepatitis A	8	2	62	55
Hepatitis B	1	4	34	42
Invasive Drug Resistant *S. pneumoniae* (DRSP)	13	14	141	128
Invasive pneumococcal (less than 5 years of age)	5	11	46	50
Gonorrhea	614	610	6,126	6,274
Legionellosis	4	1	29	35
Lyme Disease	1	1	21	20
Meningococcal, invasive	1	2	40	20
Pertussis	11	77	66	232
Rocky Mountain Spotted Fever	0	0	2	6
Salmonellosis	62	22	521	431
Shigellosis	43	19	171	196
Syphilis (Primary and Secondary)	6	3	44	52
Tuberculosis	12	8	125	117
Animal Rabies	2 (bats)	0 (bats)	27 (bats)	10 (9 bats and 1 skunk)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at (317) 233-7665.

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The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.